

CLAIMS

1. A fuel vapor treatment device comprising:
a casing having a charge port connected to a fuel tank, a
5 purge port connected to an intake section of an engine, and an
atmospheric air port through which atmospheric air is introduced,
the casing including a part adjacent the atmospheric air port;
fuel vapor adsorbing material filled in the casing; and
an adsorbing material cartridge disposed in the part of the
10 casing and formed separate from the casing, the adsorbing
material cartridge including fuel vapor adsorbing material, air
introduced from the atmospheric air port being flowable through
the fuel vapor adsorbing material of the adsorbing material
cartridge to the fuel vapor adsorbing material in the casing.
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2. A fuel vapor treatment device comprising:
a casing having a charge port connected to a fuel tank, a
purge port connected to an intake section of an engine, and an
atmospheric air port through which atmospheric air is introduced,
20 the casing including a part adjacent the atmospheric air port;
fuel vapor adsorbing material filled in the casing; and
an adsorbing material cartridge disposed in the part of the
casing and including a cylindrical cartridge main body section
having a cross-sectional area defined by an outer periphery of the
25 cartridge main body section, smaller than a cross-sectional area
defined by an inner periphery of the casing, the adsorbing material
cartridge having first and second end portions which are opposite
to each other, the first end portion being closer to the atmospheric
air port than the second end portion, the first and second end
30 portions being formed respectively with first and second openings,

air introduced from the atmospheric air port being flowable through the first and second openings to the fuel vapor adsorbing material in the casing, fuel vapor adsorbing material being filled in the cartridge main body section.

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3. A fuel vapor treatment device as claimed in Claim 2, wherein the adsorbing material cartridge includes a flange formed at the second end portion of the cartridge main body section, the flange having an outer peripheral edge portion whose profile
10 corresponds to an inner peripheral shape of the part of the casing.

4. A fuel vapor treatment device as claimed in Claim 2, wherein the casing includes a cylindrical wall section connected to the part of the casing in a manner to form a step portion, wherein
15 the adsorbing material cartridge includes a cylindrical wall section connected to the first end portion of the cartridge main body section, air introduced from the atmospheric air port being flowable through an inside of the cylindrical wall section into an inside of the cartridge main body section, the cylindrical wall
20 section of the cartridge main body section being fixed relative to the cylindrical wall section of the casing upon contact of a part of the adsorbing material cartridge to the step portion.

5. A fuel vapor treatment device as claimed in Claim 2, further
25 comprising a cylindrical air guide member fixedly disposed outside a major part of the cartridge main body section and having first and second end portions which are opposite to each other and located respectively adjacent the first and second end portions of the cartridge main body section, the first end portion of the air
30 guide member being fixed to the part of the casing and formed with

an opening in which the cartridge main body section is located, the second end portion of the air guide member being closed so as to define a space between the air guide member and the cartridge main body section, the space being in communication with the inside of the cartridge main body section and with the inside of the part of the casing.

6. A fuel vapor treatment device as claimed in Claim 2, wherein the fuel vapor adsorbing material is at least one selected from the group consisting of pellet-type fuel vapor adsorbing material and a honeycomb-shaped monolithic body of the fuel vapor adsorbing material.

7. A fuel vapor treatment device comprising:
a casing including first and second casing sections, the first casing section having a charge port connected to a fuel tank, and a purge port connected to an intake section of an engine, the second casing section having an atmospheric air port through which atmospheric air is introduced;
fuel vapor adsorbing material filled in the first and second casing sections of the casing;

an adsorbing material cartridge disposed in a part of the second casing section which part is adjacent the atmospheric air port, the adsorbing material cartridge including a cylindrical cartridge main body section having a cross-sectional area defined by an outer periphery of the cartridge main body section, smaller than a cross-sectional area defined by an inner periphery of the part of the second casing section, the adsorbing material cartridge having first and second end portions which are opposite to each other, the first end portion being closer to the atmospheric air port

than the second end portion, the first and second end portions being formed respectively with first and second openings, air introduced from the atmospheric air port being flowable through the first and second openings to the fuel vapor adsorbing material in the first and second casing sections, fuel vapor adsorbing material being filled in the cartridge main body section; and

a cylindrical air guide member fixedly disposed outside a major part of the cartridge main body section and having first and second end portions which are opposite to each other and located respectively adjacent the first and second end portions of the cartridge main body section, the first end portion of the air guide member being fixed to the second casing section and formed with an opening in which the cartridge main body section is located, the second end portion of the air guide member being closed so as to define a space between the air guide member and the cartridge main body section, the space being in communication with the inside of the cartridge main body section and with the inside of the second casing section.

8. A fuel vapor treatment device as claimed in Claim 7, wherein the casing includes a cylindrical wall section connected to the part of the second casing section in a manner to form a step portion, wherein the adsorbing material cartridge includes a cylindrical wall section connected to the first end portion of the cartridge main body section, air introduced from the atmospheric air port being flowable through an inside of the cylindrical wall section into an inside of the cartridge main body section, the cylindrical wall section of the cartridge main body section being fixed relative to the cylindrical wall section of the second casing section upon contact of a part of the adsorbing material cartridge

to the step portion.

9. A fuel vapor treatment device as claimed in Claim 7,
wherein the fuel vapor adsorbing material is at least one selected
5 from the group consisting of pellet-type fuel vapor adsorbing
material and a honeycomb-shaped monolithic body of the fuel
vapor adsorbing material.

10. A fuel vapor treatment device comprising:
10 a casing including first and second casing sections, the first
casing section having a charge port connected to a fuel tank, and a
purge port connected to an intake section of an engine, the second
casing section having an atmospheric air port through which
atmospheric air is introduced;

15 fuel vapor adsorbing material filled in the first and second
casing sections of the casing;

a cylindrical wall section extending from a part of the
second casing section which part is adjacent the atmospheric air
port into the second casing section, the cylindrical wall section
20 having a first end portion connected to the part of the second
casing section, and a second end portion through which air is
flowable, the cylindrical wall section having a cross-sectional area
defined by an outer periphery of the cylindrical wall section,
smaller than a cross-sectional area defined by an inner periphery
25 of the part of the second casing section;

an adsorbing material cartridge disposed inside the
cylindrical wall section, air introduced from the atmospheric air
port being flowable through the adsorbing material cartridge to the
second end portion of the cylindrical wall section; and

30 a cylindrical air guide member fixedly disposed outside a

major part of the cylindrical wall section and having first and second end portions which are opposite to each other and located respectively adjacent the first and second end portions of the cylindrical wall section, the first end portion of the air guide member being fixed to the second casing section and formed with an opening in which the cylindrical wall section is located, the second end portion of the air guide member being closed so as to define a space between the air guide member and the cylindrical wall section, the space being in communication with the inside of the cylindrical wall section and with the inside of the second casing section.

11. A fuel vapor treatment device as claimed in Claim 10, wherein the cylindrical wall section is integral with an inner wall surface of the part of the second casing section.

12. A fuel vapor treatment device as claimed in Claim 10, further comprising an atmospheric air port section formed with the atmospheric air port, the atmospheric air port section being integral with the second casing section and having an inner wall surface from which the cylindrical wall extends into the second casing section.

13. A fuel vapor treatment device as claimed in Claim 10, wherein the adsorbing material cartridge includes a cartridge main body section which is a honeycomb-shaped monolithic body of the fuel vapor adsorbing material.